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A CASE.

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In the autumn of 1808, six young men of New England, four being Cambridge and two Dartmouth men, met, without concert, in Philadelphia, and joined the medical class, which that session numbered 600. Of the students above referred to, four graduated in the spring. Five of the whole number were subsequently professors in various medical schools. Three are dead. The survivors are somewhat dilapidated, but still are in the field, which is the world, and may say with the Great Defender, "We still live"! One of the six, being of a meek and inquiring mind, put to the Professor of Theory and Practice, the following question: "What, Mr. Professor, do you think of morbid anatomy?"

"Less and less, Sir, every day I live."

We heard of the question and answer, and were not a little surprised at the reply. Some of us had studied with physicians who felt the deepest interest in autopsies. They were truly pets with them. To them they took their pupils, and much was learned of anatomy, healthy and morbid—as the places of organs, their relations, tissues, &c.—and with this knowledge came morbid appearances, which the master particularly marked out. For this knowledge the pupil had some work to do, and this not a trifle. It consisted in restoring the subject as nearly as possible to its state before dissection, with as much sewing, washing, wiping and dressing as would accomplish this important object. If this work was readily done for the most part, it sometimes had, at least to the pupil, exceptions.

The following case affords an argument of the greatest force against the above answer as to the question of the value of morbid anatomy.

Mr. —, aged 41, died in this city lately. He was of excellent constitution, with a gouty and rheumatic inheritance. A more

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healthful man, apparently, is rarely met with. He was a merchant, and went to South America some years ago, and transacted a large commercial business there. His exposures were great to heat, cold, drought, rains. He had the diseases of the climate, and among these was yellow fever. He returned home, and continued to his death in the South American business. His habits were as active as his business allowed. He drove, fished, &c., making leisure when its need was clear. His mind was active, and both science and literature were favorite studies. He was hospitable, and many, many friends well remember the pleasant hours they have passed with him and his family. He was of excellent appetite, eating the best of food and drinking the best of liquors. This last fact deserves special notice. The appetite seldom failed, even in disease; and in convalescence soon regained its natural power—nay, seemed stronger, as if to make up for lost time. Digestion and nutrition were always perfect, even during sickness, or in those moments of it in which suffering had more or less disappeared. This may account for another fact. Mr. — rarely was emaciated by or during disease. To have seen him when convalescence was established, you would hardly suspect that he had been ill at all. One more fact. Mr. — was of indomitable will. This showed itself in disease as well as health, and gave some embarrassment to that department of therapeutics which relates to the period of convalescence. It was quite remarkable to observe how rarely this was disturbed by considerable deviations from what are generally regarded as the best established laws of convalescent diet.

I was for about sixteen years the medical adviser in Mr. —'s family. During this time he had four attacks of disease. The first was twelve years ago. Its seat was the abdomen. A remarkable obscurity involved the disease. It assumed a dangerous form, and my master in medicine, Dr. J. Jackson, was requested to meet me in consultation. He thought it would be fatal. Its symptoms were severe and general—pain, rapid pulse, with wide constitutional and local disturbance. Recovery took place suddenly, and health was rapidly reestablished.

The next disease which occurred to Mr. — began in the right iliac region. At first there was pain—then soreness—next enlargement, defined, hard and very tender. Suppuration occurred, with its usual precursors. The large abscess was opened, and discharged well. Convalescence soon came, with full appetite, increased strength, and full recovery.

Mr. — was next attacked with jaundice, which agreed well with his former maladies in the suddenness of attack and severity of its symptoms. It should have been said before, that he had frequent but short intercalary attacks of gout, for which he had learned that *vin. colch. rad.* was the best remedy, and of which he took such doses as he *felt* were indicated. His attacks of gout were so

well marked that the remedy was at once resorted to, and, as was said, with rapid removal of the symptoms.

The jaundice with which Mr. — was duly credited, had a complication which is occasionally observed. This is cough. The attack was in early summer, which was singularly illtimed, as a furnished house in G., hard by the sea, had been engaged. The day for leaving home had been fixed, and when it came, it proved rainy, and altogether inappropriate to the removal of a still quite diseased person from bed and chamber. Mr. — said he would go, let what might happen, or be produced, and he went. The length and severity of the disease had produced their usual effects, both weakness and loss of flesh. The appetite also was diminished.

I heard nothing from Mr. — for some days, when I was hastily summoned to G. As soon as I entered the house, a very disagreeable odor presented itself, and in the chamber it was so declared as to make it almost impossible to stop in it. Mr. — was found coughing very hard, and almost without intermission. The sputa were large, dark, and of an odor compounded of the fecal and putrid. The breathing was much embarrassed by the frequency and force necessary to remove the obstruction produced by the rapid accumulation of the sputa.

At length convalescence began, and, as usual with Mr. —, was rapid. Appetite occurred as before, and the slight loss of flesh and the physical weakness were soon lost in increase of normal flesh and strength.

After recovery, various transient but increasing troubles showed themselves, and in their gradual increase and new symptoms we may date the fourth and fatal disease of Mr. —. Diarrhœa and ischuria, with pain in the renal region and in the course of the ureters, formed prominent symptoms of the attack. I saw him only occasionally in visits to his family, as he had now called in another physician. The diarrhœa became a leading symptom. Thus he would have ten or twelve discharges in a night, with many in the course of every day, and this whatever his occupation—whether for pleasure, as fishing, &c., or when engaged in his business labors.

The dysuria at length rapidly increased. His strength continued remarkably, considering the severity of his symptoms. He did not lose flesh till after months' continuance of his troubles. His appetite remained. Food in usual quantities was well digested, and nutrition was well sustained. Various means were used for relief of pain, until at length sulphuric ether was resorted to, and for a time with much benefit—or rather relief of suffering. As this agent does not interfere with important functions, it was used as freely as circumstances demanded. At length flesh began to disappear, and so did strength. But Mr. — was still able to walk to his place of business—driving being resorted to when necessary. The complexion changed. It became pale and sallow, with the usual changes

in the expression of the features which grave organic and functional lesions bring with them. When ether failed, or nearly failed, to bring relief, opium was resorted to, and on one day an ounce of tincture of opium was taken, and about two quarts of Squibb's ether were used, with very little relief.

I was asked by his attending physician, Dr. E. Palmer, to meet him and Dr. J. Bigelow in consultation. I had not seen Mr. — for some weeks, and was struck with his manner and appearance. He was in great distress, at times amounting to agony. His skin had undergone great change, showing spots of various sizes, of a dark bluish or livid color. Some of them had a regular outline, while others were very irregular, having an appearance most like scorbutus. They were first seen about eight days before my visit. About five days before, the left knee-joint became bent, and at length to such a degree that the calf rested against the back part of the thigh. The joint was perfectly rigid, and the least effort to move it produced perfect agony. The largest and best-defined spot was upon this thigh. He insisted upon getting out of bed to pass water and feces—frequent calls—which only increased his suffering.

The tongue was swollen in its lower aspect, and the surrounding tissues were of color similar to that of the skin. Its tip was turned, or rather curled, so that it rested against the roof of the mouth, making it difficult for liquids, which were strongly demanded, to reach the fauces.

In consultation it was agreed to add one part of chloroform to three or four of ether. The effect of this was at once observed. A very small quantity of the mixture did what large amounts of ether alone failed to do, and quiet sleep replaced the restlessness which pain had produced, and which doubtless had increased the suffering. In a day or two were symptoms of approaching death. The pulse became very rapid, consciousness diminished, and death occurred without apparent suffering.

Examination after death.—The thorax was first examined. The lungs and heart were healthy throughout; old adhesions existed between the liver and diaphragm, and between the latter and the lung. It will be recollected that cough occurred towards the close of the severe jaundice already described, and that large quantities of most offensive sputa accompanied the cough. I once alluded to these facts in Mr. —'s case, and expressed the opinion that an abscess had formed in the liver, and that by adhesions between the liver and diaphragm, and between that and the lung, ulceration preceded by adhesion had effected a communication between the liver, abscess and lung. But in neither liver nor lung was the slightest organic disease discovered. "What a repairer is nature!" said Dr. Ellis, who made the autopsy.

The abdomen was next and most thoroughly examined. Every organ, save the gall-bladder, was found to be perfectly natural.

This was long, irregularly cylindrical, as if it were drawn out, and terminating in the arch of the colon, where the ascending portion and arch meet. Between the cavity of the gall-bladder and the intestine were two large openings, evidently of long standing. The pancreatic duct was normal.

Incisions were made in the discolored spots before described. The discoloration extended more than half an inch from the surface, showing conclusively how important a part the blood disease had in the production of death.

It will be remembered that diarrhœa occurred between the attack of jaundice, and that which immediately preceded death, which last happened some years after.

There was one fact which accompanied the diarrhœa which was not accounted for. This was the remarkable preservation of flesh and general health. It was not till within a short time before death that loss of flesh occurred, and this was hardly emaciation. The appetite was excellent. The most nutritious food was taken at every meal. It was digested perfectly, and by the rapid absorption of the chyle—the healthful function of the lacteals—nutrition was accomplished; the repair was equal to the waste, and not unfrequently exceeded it. The bile, the natural cathartic, was poured into the colon, the receptacle of what the small intestines had no farther use for, and rapidly got rid of in formless or semi-liquid fecal matter. The number of these evacuations was very large—ten or twelve in a night, and very often in the day and evening; and with all this to exhaust strength as well as flesh, no such exhaustion happened. Mr. — was a member of a mercantile firm, and upon him was laid the whole burden of correspondence, arrangements of voyages, &c. &c., while the shipping affairs devolved upon his partner. The correspondence referred to, the letters of Mr. —, have been again and again spoken of to me, as the most perfect of their kind. Unless confined to the house by gout or rheumatism, which hardly ever happened, he was always at his post, working day in and day out, without uttering a word of fatigue.

The kidneys, ureters and bladder presented not the slightest appearance of disease. The skin showed stronger marks of disease than did any other tissue. Afterwards it was the only organ which bore the marks of disease, the gall-bladder being alone excepted. On what did this state depend? Or what was its cause? Blood poison? Nothing but a morbid condition of the blood can explain so extensive a lesion as the skin manifested. The adhesion of the gall-bladder to the colon, above described, was followed by two openings of the former into the latter. Would not these have been closed, as was the communication between the liver and lung, had not the constant current of the bile kept the channel open?

Dr. Ellis, in most kind reply to a request that he would furnish me with notes of the autopsy, has sent me the enclosed, for which,

and for many other expressions of friendly regard, I feel exceedingly obliged to him. And who of the profession, who have availed themselves of his admirable skill in such works, have failed to receive like expressions of his cheerful readiness to comply with their requests?

OCT. 30th, 1863.

DEAR SIR,—I find the following record of Mr. ———'s case:—A very large bluish spot over the upper part of the chest marked the seat of a large effusion of blood into the cellular tissue and muscle below. Much blood was also infiltrated among the muscles of the neck. There was also a large effusion of blood into the anterior mediastinum. The right lung adhered strongly to the diaphragm. The left was also slightly adherent at the base. The liver adhered to the diaphragm, but with the exception of limited superficial thickening of one portion of the capsule, there was no disease. The gall-bladder was firmly united to the large intestine at the junction of the ascending and transverse portions. Two large openings, with smooth edges, established free communication between the cavities. Calculi, or rather masses of biliary matter, filled the smaller extremity of the gall-bladder. The other organs presented no remarkable peculiarities.

NOTES BY THE WAY.

[Communicated for the Boston Medical and Surgical Journal.]

By M. W. CASE, M.D., TREMONT, ILLINOIS.

TUESDAY morning, Oct. 27th, found me in Chicago, the western metropolis, a deeply-interested spectator of the opening ceremonies of the "Great Northwestern Sanitary Fair." No words of mine can add to the tribute of honor that has been paid to those noble-hearted ladies who originated and carried on this gigantic enterprise.

But there are *Sanitary* institutions that for many years have been steadily at work, doing more to benefit and alleviate the sufferings of mankind than all other institutions combined; and yet the good people know but little about them, and seemingly care less. Our Medical Colleges are doing more for suffering humanity than all the Sanitary Commissions in the world could do without them. Reflections like these led me to visit the Medical Colleges of this city.

My first visit was to RUSH COLLEGE, a plain, substantial brick edifice, at the corner of Dearborn and Indiana streets. The Lecture rooms will seat about 250 students. When I arrived at the Hall, Ephraim Ingalls, Professor of Materia Medica and Medical Jurisprudence, was lecturing to a class numbering over 200. My impression is that I have never seen a class where so large a proportion were near the meridian of life, and I certainly have never seen one that gave better attention to the professors. They do not take notes, especially in College Clinics, as *much* as they will wish

they had when they experience the perplexing cares of a physician's daily routine of professional life. Professor Ingalls is a pleasant, interesting lecturer, affable in conversation, and is well liked by his class.

The next lecturer I had the pleasure of listening to, was R. L. Rea, Professor of Anatomy. Prof. Rea is a skilful anatomist. As a lecturer he is thorough, and if the members of his class do not come out good anatomists, it will not be through any fault of his. He speaks very rapidly, perhaps at times a little too much so, but he does not fail to keep the attention of the class much better than professors of anatomy are generally able to do. I am informed by those who know, that, as a kind-hearted and attentive surgeon and physician, he has not a superior in Chicago.

J. Adams Allen, Professor of the Principles and Practice of Medicine and Clinical Medicine, I had the pleasure of listening to at the College Clinic. Prof. A. is the favorite with the class. Few men have an equal faculty to instruct and amuse at the same time. Several times during the hour he brought down the house, and an *en-core* from the class would not have surprised me. Prof. Allen is a progressive man, and thinks good air, proper food and exercise, and unlimited faith in Prof. Brainard, are the only essentials to a perfect cure for all curable diseases.

A lecture on Chemistry, by Prof. E. S. Carr, who ranks among the first in the country as a chemist, closed this interesting day at Rush. I very much regret that want of time prevented me from listening to Professors Brainard, Freer, Holmes and Lynn. The former of these gentlemen, the presiding genius of this Institution, I expected to have met at Hospital Clinics, but was disappointed.

Rush College numbers some 600 graduates, and its present flourishing condition is gratifying to all interested in medical progress.

ON FERMENTATION AS A CAUSE OF VARIOUS DISEASES.

By M. POLLI.

M. POLLI, of Milan, has recently published two very interesting memoirs on fermentation as a cause of various diseases, from which we extract some of the more important facts.

Chemists who have, of late years, investigated with the greatest success the phenomena of fermentation, have observed that this mode of reaction amongst organic principles has a much greater importance than was suspected. It is, in fact, to fermentation that the spontaneous decomposition of animal and vegetable tissues is due, such as gangrene, dry-rot, cremacausis, &c., and the whole series of successive transformations that organic substances undergo until they are converted into water, carbonic acid, ammonia and mineral matters. It is by fermentation that fatty bodies give gly-

cerine; that salicine furnishes glucose; that myronate of potash is converted into essential oil of mustard; that neutral substances, such as urea and allantoin, form ammonia; that amygdaline produces the poisonous substances, oil of bitter almonds and hydrocyanic acid.

Ferments act by contact or by catalysis. Sometimes they are living creatures, sometimes very active substances which are not organized. Diastase, emulsine and pepsine perform the part of ferments. They may cause organic substances to double, become hydrated or isomeric.

According to M. Polli, there exists a great analogy between the processes of fermentation and many organic metamorphoses which occur in some diseases. An albuminous matter which in a particular state of alteration acts as a ferment, and particular substances which proceed from its action; this is the basis of the humoral theory.*

But analogy is not sufficient of itself; it has been shown by carefully conducted experiments that the blood in disease undergoes alterations and variations in its composition, and that artificial disease may be produced bearing a strong resemblance to natural disease, by injecting into the bloodvessels substances which act as ferments. Multiple abscesses, induced by the injection of pus into the veins of dogs; septic affections caused by injecting purulent putrid matters into the veins of animals; diseases presenting all the characteristics of typhoid fever, and caused by the injection of putrefied blood into the circulating current; finally, contagious diseases, such as glanders, which is produced by the injection of glanderous humors, are facts which prove that a general affection may be induced by the simple introduction into the blood of a substance capable of acting as a ferment. The diseases which may be called catalytic, in which the morbid matter produces metamorphoses by contact with the alterable principles of the blood, are the primary cause of all the symptoms presented by the animal economy. In short, it is impossible to deny that fermentation may be produced in the blood.

But admitting that the starting-point of many diseases is the action of a specific ferment in the blood, is it possible to prevent its effects, to render it inactive in the living organism, as we may do apart from the body, by many chemical means? This is the great point which gives interest to this pathological question.

M. Polli believes that he has proved, by a series of facts and conclusive experiments, that it is possible to neutralize morbid ferments in the blood of animals by chemical substances which do not act in a manner incompatible with life; and it is by these substances

* According to M. Pasteur, ferment is not albuminous matter altered by oxygen, but an organized being, the germ of which is brought by the air. The presence of albuminous matter is an indispensable condition of all fermentations, because such substances are necessary to the production of the ferment.

that we must hope to treat successfully those diseases of which fermentation is the primary cause.

It is well known that sulphurous acid gas prevents alcoholic and acetic fermentation, and also the fermentation of animal substances and organic matters in general. Thus it arrests, if it be already begun, the fermentation produced by saliva and diastase in contact with starch, the fermentation which myrosine produces in the paste of black mustard flour, that which is produced by emulsine on the amygdaline of bitter almonds, &c.

M. Polli has proved that alkaline or earthy sulphites possess the same antiseptic and decolorizing properties. This is a very important fact, since it admits of the application of sulphurous acid in therapeutics. He thinks, also, that he has ascertained that the action of sulphurous acid and of sulphites on coloring matters, as well as on ferments, is neither a deoxygenation, a combination, nor a destruction, but simply a molecular modification.

This mode of action of sulphurous acid and sulphites explains the valuable property which these chemical compounds possess of preventing or energetically arresting the action of morbid ferments artificially introduced into the blood of animals, without altering its composition in such a manner as to be incompatible with life.

From a great number of experiments made upon dogs, and alluded to in his memoirs, M. Polli has determined the safe and efficacious dose of sulphites for internal administration, the changes which they undergo in the organization, and their curative action in the affections produced by the injection of putrid or contagious matters into the blood.

The following are some of his experiments, selected from those of the last-mentioned series:—

1. Ten grammes of sulphite of soda were given to a dog during a period of five days, then one gramme of pus was injected into the femoral vein. The animal became dull, and refused the food which it was offered, but the next day its spirits returned and it ate willingly. Two days after, the same experiment was repeated and was followed by the same results. At the end of a few days the animal was perfectly cured.

2. One gramme of pus was injected in two portions into the veins of a dog, of a more robust nature than that operated upon in the preceding experiment. The animal became spiritless, but the next day took some food; the following day it was very low, it breathed with difficulty, its wounds were sanious, its left leg and foot swollen, and it died ten days afterwards.

3. An equal quantity of putrid blood was injected into the veins of three dogs; one died five hours after the infection, another after five days of illness, and the third, to which some sulphite of soda had been administered, after having experienced some trifling symptoms of illness, rapidly recovered.

4. Numerous other experiments made with putrid blood and morbid mucus proved that the animals died with all the symptoms of a general infection, whenever sulphite of soda was not administered, and that, on the contrary, they speedily recovered under its influence.*

If these facts should be confirmed by other experiments, M. Polli will have rendered an inestimable service to therapeutics, and will have thrown some light on the yet obscure cause of numerous diseases.—*Pharm. Journ. and Trans.*, London, April, 1863, from *Journal de Pharmacie et de Chimie*.

THE PHYSIOLOGICAL EFFECTS OF EXERCISE UPON THE HUMAN BODY.

TRANSLATED FROM CANSTATT'S JAHRESBERICHT.

THE investigations of Speck, upon the influence of exercise on the human body, embrace two new series of experiments, which the author made upon himself, and those which he made on two persons, aged 23 years, and one upon a young man of 19 years. His conclusions are as follows:—

Corporeal exercise has, as its consequence, the diminution of the weight of the body. Since there is but a small change, unless the weight of the body be at once determined, after the exercise has been taken, there might be an error in the estimate. The diminution in the weight ceases contemporaneously with the cessation of the muscular activity;—in case there should continue any excretory action after the muscles are at rest, this should not be included in the estimate of the loss. The researches of Speck afford no positive evidence whether or no moderate muscular exercise favors a reparation of the loss sustained.

The use of water during corporeal exercise appears to act differently than during inaction: during rest, the use of water diminishes the weight of the body; on the contrary, during action, the drinking of water is accompanied by an augmentation of the body's weight, the water being probably retained to compensate for the loss of fluids, which otherwise ensues.

Muscular exertion constantly diminishes the whole quantity of urine which is excreted; during action, the quantity may be reduced to two-thirds, or even one-half of the normal amount. The cause of the diminution of the quantity of the urine during action, is, that there is, during exercise, an increased cutaneous transpiration;—hence, during exercise, the urinary excretion contains more solid materials than usual, so that, in this respect, muscular activity becomes an important agent in promoting renal elimination.

* For a notice of the sulphites tried by Prof. Polli, see the current volume of the "Pharmaceutical Journal," p. 37.

During labor, the skin and the lungs become the main excretory outlets; the excretory processes are more active at the close of the afternoon than during the forenoon. During active exercise, the perspiration may be increased to three-fold its usual amount;—after the exercise has ceased, the perspiration is rapidly reduced, or may wholly cease.

The fecal evacuations are, as a rule, less during exercise than during repose. Food of the same kind appears to be alike digested during repose or muscular activity;—it is probable that the less weight of the excrements, during exercise, is dependent upon the want of the aqueous element. Intestinal peristalsis occurs more slowly during violent exercise.

There has been observed no perceptible alteration in regard to the quantity of urea which is eliminated during active bodily exercise. * * * Physical exercise increases, to a great extent, the amount of uric acid that is discharged;—indeed, it is augmented beyond any other urinary ingredient; for example, it is augmented to double or even three-fold its normal amount. As the use of the water diminishes the relative amount of the uric acid in urine, so, on the contrary, free perspiration increases it.

Since the perspired matter contains, in considerable quantity, chloride of sodium, hence, when the cutaneous transpiration is profuse, the quantity of chloride of sodium in the urine is lessened.

All researches made indicate a considerable increase of sulphuric acid in the urine during exercise;—this augmentation continues for some time after the exercise has been discontinued. The perspiration seems to remove little or no sulphuric acid.

Phosphoric acid is also considerably augmented in the urine, both during and after exercise; the quantity of this acid which is excreted during free perspiration appears less than that during diminished perspiration, hence the inference that there is a portion of phosphoric acid excreted also through the skin. * * *

The quantity of the air which traverses the lungs is gradually increased from morning until evening, so that, in the evening, from 8 to 9 o'clock, the maximum is attained. Exercise very notably augments this amount; the augmentation is manifest, even when the number of respirations remains the same. The quantity of carbonic acid which is eliminated is more increased than the amount of air;—for example, during gentle exercise the elimination of this gas becomes double the normal standard, and during violent exercise the quantity of carbonic acid excreted is augmented to three-fold the usual amount.

The heat of the organism is somewhat increased by exercise, though, soon after the exercise has ceased, the temperature rapidly sinks even to a point below the normal degree. The production of the perspiration appears to be accompanied with an increase of bodily heat. The lowest temperature of the body is in the morn-

ing, the highest at mid-day, and in the evening there occurs a diminution again.

The following interesting item, we translate from *Canstatt's Jahresbericht*—last number issued—which shows that, in the intercommunication between mother and offspring, even foreign matter may pass from the mother to the young, through milk as well as placental blood.

The fact having previously been noticed by Flourens, that the bones of the fœtus became colored red, when the mother has been fed upon red coloring matter, he extended his observations still further, and has found that the bones of the young offspring become red-tinted, when, during the period of nursing, its mother feeds upon reddened food. The experiment succeeded perfectly in young suckling pigs, of which the bones became red in from fourteen to twenty days. Since, however, the pigs might have eaten some of the reddened food of the mother, Flourens selected another class of animals for experiment, in which this source of error could not exist, viz., albino rats and rabbits. In the albino rat, the skeleton became red in eleven days; in the albino rabbit, the same phenomenon occurred in nine days; though not a trace of reddened matter had been eaten by the young, since they had lived wholly upon the milk of their mothers. [The coloring material usually employed in these experiments is that from the *Rubia tinctoria*, or madder.—Ed.]
—*San Francisco Med. Press.*

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BOSTON: THURSDAY, NOVEMBER 26, 1863.

MAN'S PLACE IN NATURE.—But a few years ago, less than a decade, and men of science, whose word was unquestioned law, had established the order of the universe. They had exhausted the secrets of creation, had explored and proclaimed the history of the globe from chaos to the latest spring; had arranged the distribution and succession of organic life upon its ever-shifting surface; had fixed the date of man's appearance upon it, and the depth of water below which all was blank, azœic darkness; they had announced that no more species of large animals remained to be discovered, and as a finis to the last and complete chapter in the natural history of mammalia, the chief of England's learned men assigned them their proper places in a new classification based upon the structure of the brain. It appeared to be forgotten that these questions had been settled by man just as dictatorily several times before them, and that perhaps another Columbus or Copernicus might arise to disarrange *their* final settlement of earthly and celestial matters. Within a few short years, however, and the sounding-line has brought up from the vast depths of ocean living proof of their anima-

tion by God's light and life: many large and hitherto unknown mammals, including races of the *genus homo*, have been brought to our knowledge, and the existence of fossil man has been placed beyond all question.

It is unfortunate, but true, that many of our most eminent men of science, who have won by their labors the believing attention of the public, are wont to assume an authoritative tone, when speaking of the phenomena of nature, as if they were her ruler instead of her interpreter. Nature must move along to suit their theories, and the observations of younger eyes and earnest seekers must coincide with their teachings, or they abuse their influence over the public by cautioning it against all new comers. A decided manifestation of this spirit has been exhibited in the history of the discussions which have arisen within a short time in relation to the re-examination of the question of man's rank in the zoölogical scale. Prof. Owen, in the work above alluded to, on the classification of the mammalia, removed man from the Linnæan order of Primates, and assigned him a new and distinct place in creation. The reason of this was founded, as he stated, upon the following anatomical grounds:—

"Not only do the cerebral hemispheres overlap the olfactory lobes and cerebellum, but they extend in advance of the one and further back than the other. The posterior development is so marked, that anatomists have assigned to that part the character of a third lobe; it is peculiar to the *genus Homo*, and equally peculiar is the posterior horn of the lateral ventricle and the '*hippocampus minor*' which characterize the hind lobe of each hemisphere."—*Journal of the Proceedings of the Linnæan Society*, Vol. ii., p. 19.

Since that time, although it has been proved by numerous dissections, beyond question and in the most public manner, that these assertions are contrary to fact, he has reiterated them on all occasions, and without adducing any argument or preparation in their support.

Among those who have been most zealous in searching for the truth in this and similar questions connected with the natural history of man, is Prof. Huxley, who, although a progressionist, is nevertheless a most thorough and conscientious student, and one who believes in the recognition of the truth in science without regard to consequences and preconceived theories. His essay upon man's place in nature, based upon most careful anatomical analyses, must claim the respectful attention even of those who do not care to follow where his deductions seem to lead. He has treated this difficult and important question with so much research, and yet, in so simple and pleasing a manner, that we cannot refrain from quoting from his pages at length, although some of our readers may not be disposed to claim so close a relationship with the apes as comparative anatomy hints at.

"The study of development affords a clear test of closeness of structural affinity, and one turns with impatience to inquire what results are yielded by the study of the development of man. Is he something apart? Does he originate in a totally different way from dog, bird, frog and fish, thus justifying those who assert him to have no place in nature and no real affinity with the lower world of animal life? Or does he originate in a similar germ, pass through the same slow and gradually progressive modifications—depend on the same contrivances for protection and nutrition, and finally enter the world by the help of the same mechanism? The reply is not doubtful for a moment, and has not been doubtful any time these thirty years. Without question, the mode of origin and the early stages of the development of man are identical with those of the animals im-

diately below him in the scale: without a doubt, in these respects, he is far nearer the apes, than the apes are to the dog.

"But, exactly in those respects in which the developing man differs from the dog, he resembles the ape, which, like man, has a spheroidal yolk-sac and a discoidal—sometimes partially lobed-placenta.

"So that it is only quite in the later stages of development that the young human being presents marked differences from the young ape, while the latter departs as much from the dog in its development, as the man does.

"Startling as the last assertion may appear to be, it is demonstrably true, and it alone appears to me sufficient to place beyond all doubt the structural unity of man with the rest of the animal world, and more particularly and closely with the apes."

Passing from a comparison founded upon the development of man during foetal life to the examination of his adult and perfect structure, and that of the animals immediately below him, he says:—

"Let us endeavor for a moment to disconnect our thinking selves from the mask of humanity; let us imagine ourselves scientific Saturnians, if you will, fairly acquainted with such animals as now inhabit the earth, and employed in discussing the relations they bear to a new and singular 'erect and featherless biped,' which some enterprising traveller, overcoming the difficulties of space and gravitation, has brought from that distant planet for our inspection, well preserved, may be, in a cask of rum. We should all, at once, agree upon placing him among the mammalian vertebrates; and his lower jaw, his molars, and his brain, would leave no room for doubting the systematic position of the new genus among those mammals, whose young are nourished during gestation by means of a placenta, or what are called the 'placental mammals.'

"Further, the most superficial study would at once convince us that, among the orders of placental mammals, neither the whales nor the hoofed creatures, nor the sloths and ant-eaters, nor the carnivorous cats, dogs, and bears, still less the rodent rats and rabbits, or the insectivorous moles and hedgehogs, or the bats, could claim our '*Homo*' as one of themselves.

"There would remain, then, but one order for comparison, that of the apes (using that word in its broadest sense), and the question for discussion would narrow itself to this—is man so different from any of these apes that he must form an order by himself? Or does he differ less from them than they differ from one another, and hence must take his place in the same order with them?

"Being happily free from all real, or imaginary, personal interest in the results of the inquiry thus set afoot, we should proceed to weigh the arguments on one side and on the other, with as much judicial calmness as if the question related to a new opossum. We should endeavor to ascertain, without seeking either to magnify or diminish them, all the characters by which our new mammal differed from the apes; and if we found that these were of less structural value than those which distinguish certain members of the ape order from others universally admitted to be of the same order, we should undoubtedly place the newly discovered tellurian genus with them.

"I now proceed to detail the facts which seem to me to leave us no choice but to adopt the last-mentioned course."

He then goes on to draw a minute comparison between the structure of the bony frame, the skull, the teeth, and the feet and hands of man and the highest apes, and passing to the subject of the structure of the brain, he proceeds,

"As if to demonstrate, by a striking example, the impossibility of erecting any cerebral barrier between man and the apes, nature has provided us, in the latter animals, with an almost complete series of gradations from brains little higher than that of a rodent, to brains little lower than that of man. And it is a remarkable circumstance, that though, so far as our present knowledge extends, there is one true structural break in the series of forms of Simian brains, this hiatus does not

lie between man and the man-like apes, but between the lower and the lowest Simians; or, in other words, between the old and new world apes and monkeys, and the lemurs. Every lemur which has yet been examined, in fact, has its cerebellum partially visible from above, and its posterior lobe, with the contained posterior cornu and hippocampus minor, more or less rudimentary. Every marmoset, American monkey, old world monkey, baboon, or man-like ape, on the contrary, has its cerebellum entirely hidden, posteriorly, by the cerebral lobes, and possesses a large posterior cornu, with a well developed hippocampus minor."

"When the gravest errors respecting points so easily settled as this question respecting the posterior lobes, can be authoritatively propounded, it is no wonder that matters of observation, of no very complex character, but still requiring a certain amount of care, should have fared worse. Any one who cannot see the posterior lobe in an ape's brain is not likely to give a very valuable opinion respecting the posterior cornu or the hippocampus minor. If a man cannot see a church, it is preposterous to take his opinion about its altar-piece or painted window—so that I do not feel bound to enter upon any discussion of these points, but content myself with assuring the reader that the posterior cornu and the hippocampus minor have now been seen—usually at least as well developed as in man, and often better—not only in the chimpanzee, the orang, and the gibbon, but in all the genera of the old world baboons and monkeys, and in most of the new world forms, including the marmosets.

"In fact, all the abundant and trustworthy evidence (consisting of the results of careful investigations directed to the determination of these very questions, by skilled anatomists) which we now possess, leads to the conviction that, so far from the posterior lobe, the posterior cornu, and the hippocampus minor, being structures peculiar to and characteristic of man, as they have been over and over again asserted to be, even after the publication of the clearest demonstration of the reverse, it is precisely these structures which are the most marked cerebral characters common to man with the apes. They are among the most distinctly Simian peculiarities which the human organism exhibits."

"So far as cerebral structure goes, therefore, it is clear that man differs less from the chimpanzee or the orang, than these do even from the monkeys, and that the difference between the brains of the chimpanzee and of man is almost insignificant, when compared with that between the chimpanzee brain and that of a lemur.

"It must not be overlooked, however, that there is a very striking difference in absolute mass and weight between the lowest human brain and that of the highest ape—a difference which is all the more remarkable when we recollect that a full-grown gorilla is probably pretty nearly twice as heavy as a Bosjes man, or as many an European woman. It may be doubted whether a healthy human adult brain ever weighed less than thirty-one or -two ounces, or that the heaviest gorilla brain has exceeded twenty ounces.

"This is a very noteworthy circumstance, and doubtless will one day help to furnish an explanation of the great gulf which intervenes between the lowest man and the highest ape in intellectual power;* but it has little systematic value, for

* I say *help* to furnish: for I by no means believe that it was any original difference of cerebral quality, or quantity, which caused that divergence between the human and the pithecoïd stirps, which has ended in the present enormous gulf between them. It is no doubt perfectly true, in a certain sense, that all difference of function is a result of difference of structure; or, in other words, of difference in the combination of the primary molecular forces of living substance; and, starting from this undeniable axiom, objectors occasionally, and with much seeming plausibility, argue that the vast intellectual chasm between the ape and man implies a corresponding structural chasm in the organs of the intellectual functions; so that, it is said, the non-discovery of such vast differences proves, not that they are absent, but that science is incompetent to detect them. A very little consideration, however, will, I think, show the fallacy of this reasoning. Its validity hangs upon the assumption, that intellectual power depends altogether on the brain—whereas the brain is only one condition out of many on which intellectual manifestations depend; the others being, chiefly, the organs of the senses and the motor apparatuses, especially those which are concerned in prehension and in the production of articulate speech.

"A man born dumb, notwithstanding his great cerebral mass and his inheritance of strong intellectual instincts, would be capable of few higher intellectual manifestations than an

the simple reason that, as may be concluded from what has been already said respecting cranial capacity, the difference in weight of brain between the highest and lowest men is far greater, both relatively and absolutely, than that between the lowest man and the highest ape. The latter, as has been seen, is represented by, say twelve, ounces of cerebral substance absolutely, or by 32 : 20 relatively; but as the largest recorded human brain weighed between 65 and 66 ounces, the former difference is represented by more than 33 ounces absolutely, or by 65 : 32 relatively. Regarded systematically the cerebral differences, of man and apes, are not of more than generic value—his family distinction resting chiefly on his dentition, his pelvis, and his lower limbs.

"Thus, whatever system of organs be studied, the comparison of their modifications in the ape series leads to one and the same result—that the structural differences which separate man from the gorilla and the chimpanzee are not so great as those which separate the gorilla from the lower apes."

How Prof. Huxley is prepared to answer the moral objections to his conclusions, and the unsupported dicta of autocrats in science, may be judged by the following bold and beautiful language; and we trust that every physician will read at his earliest opportunity the whole of this essay upon a question of so vast interest and importance.

"Science has fulfilled her function when she has ascertained and enunciated truth; and were these pages addressed to men of science only, I should now close this essay, knowing that my colleagues have learned to respect nothing but evidence, and to believe that their highest duty lies in submitting to it, however it may jar against their inclinations.

"But desiring, as I do, to reach the wider circle of the intelligent public, it would be unworthy cowardice were I to ignore the repugnance with which the majority of my readers are likely to meet the conclusions to which the most careful and conscientious study I have been able to give to this matter, has led me.

"On all sides I shall hear the cry—'We are men and women, not a mere better sort of apes, a little longer in the leg, more compact in the foot, and bigger in brain than your brutal chimpanzees and gorillas. The power of knowledge—the conscience of good and evil—the pitiful tenderness of human affections, raise us out of all real fellowship with the brutes, however closely they may seem to approximate us.'

"To this I can only reply that the exclamation would be most just and would have my own entire sympathy, if it were only relevant. But, it is not I who seek to base man's dignity upon his great toe, or insinuate that we are lost if an ape has a hippocampus minor. On the contrary, I have done my best to sweep away this vanity. I have endeavored to show that no absolute structural line of demarcation, wider than that between the animals which immediately succeed us in the scale, can be drawn between the animal world and ourselves; and I may add the expression of my belief that the attempt to draw a psychical distinction is

orang or a chimpanzee, if he were confined to the society of dumb associates. And yet there might not be the slightest discernible difference between his brain and that of a highly intelligent and cultivated person. The dumbness might be the result of a defective structure of the mouth, or of the tongue, or a mere defective innervation of these parts; or it might result from congenital deafness, caused by some minute defect of the internal ear, which only a careful anatomist could discover.

"The argument, that because there is an immense difference between a man's intelligence and an ape's, therefore there must be an equally immense difference between their brains, appears to me to be about as well based as the reasoning by which one should endeavor to prove that, because there is a 'great gulf' between a watch that keeps accurate time and another that will not go at all, there is therefore a great structural hiatus between the two watches. A hair in the balance-wheel, a little rust on a pinion, a bend in a tooth of the escapement, a something so slight that only the practised eye of the watchmaker can discover it, may be the source of all the difference.

"And believing, as I do, with Cuvier, that the possession of articulate speech is the grand distinctive character of man (whether it be absolutely peculiar to him or not), I find it very easy to comprehend, that some equally inconspicuous structural difference may have been the primary cause of the immeasurable and practically infinite divergence of the Human from the *S. mian* *Stirps*."

equally futile, and that even the highest faculties of feeling and of intellect begin to germinate in the lower forms of life. At the same time no one is more strongly convinced than I am of the vastness of the gulf between civilized man and the brutes; or is more certain that whether *from* them or not, he is assuredly not *of* them. No one is less disposed to think lightly of the present dignity, or despairingly of the future hopes, of the only consciously intelligent denizen of this world.

"We are indeed told by those who assume authority in these matters, that the two sets of opinions are incompatible, and that the belief in the unity of origin of man and brutes involves the brutalization and degradation of the former. But is this really so? Could not a sensible child confute, by obvious arguments, the shallow rhetoricians who would force this conclusion upon us? Is it, indeed, true, that the poet, or the philosopher, or the artist, whose genius is the glory of his age, is degraded from his high estate by the undoubted historical probability, not to say certainty, that he is the direct descendant of some naked and bestial savage, whose intelligence was just sufficient to make him a little more cunning than the fox, and by so much more dangerous than the tiger? Or is he bound to howl and grovel on all fours because of the wholly unquestionable fact, that he was once an egg, which no ordinary power of discrimination could distinguish from that of a dog? Or is the philanthropist or the saint to give up his endeavors to lead a noble life, because the simplest study of man's nature reveals, at its foundations, all the selfish passions and fierce appetites of the merest quadruped? Is mother-love vile because a hen shows it, or fidelity base because dogs possess it?

"The common sense of the mass of mankind will answer these questions without a moment's hesitation. Healthy humanity, finding itself hard pressed to escape from real sin and degradation, will leave the brooding over speculative pollution to the cynics and the 'righteous overmuch' who, disagreeing in everything else, unite in blind insensibility to the nobleness of the visible world, and in inability to appreciate the grandeur of the place man occupies therein.

"Nay more, thoughtful men, once escaped from the blinding influences of traditional prejudice, will find in the lowly stock whence man has sprung, the best evidence of the splendor of his capacities; and will discern in his long progress through the past, a reasonable ground of faith in his attainment of a nobler future.

"They will remember that in comparing civilized man with the animal world, one is as the Alpine traveller, who sees the mountains soaring into the sky and can hardly discern where the deep shadowed crags and roseate peaks end, and where the clouds of heaven begin. Surely the awe-struck voyager may be excused if, at first, he refuses to believe the geologist, who tells him that these glorious masses are, after all, the hardened mud of primeval seas, or the cool slag of subterranean furnaces—of one substance with the dullest clay, but raised by inward forces to that place of proud and seemingly inaccessible glory.

"But the geologist is right; and due reflection on his teachings, instead of diminishing our reverence and our wonder, adds all the force of intellectual sublimity to the mere æsthetic intuition of the uninstructed beholder.

"And after passion and prejudice have died away, the same result will attend the teachings of the naturalist respecting that great Alps and Andes of the living world—Man. Our reverence for the nobility of manhood will not be lessened by the knowledge, that man is, in substance and structure, one with the brutes; for, he alone possesses the marvellous endowment of intelligible and rational speech, whereby, in the secular period of his existence, he has slowly accumulated and organized the experience which is almost wholly lost with the cessation of every individual life in other animals; so that now he stands raised upon it as on a mountain top, far above the level of his humble fellows, and transfigured from his grosser nature by reflecting, here and there, a ray from the infinite source of truth."

INSPECTING SURGEONS OF VOLUNTEERS IN MASSACHUSETTS.—The following is a list of the gentlemen detailed by Surgeon General Dale, as

inspecting surgeons in this State under the late call of the President of the United States for 300,000 volunteers.

Berkshire County.—Pittsfield:—Oliver E. Brewster, M.D., late Surgeon 40th Mass. Vols., who is authorized to appoint surgeons in such towns as the public convenience may require, the same to be approved by Medical Director U. S. A. and Surgeon General Massachusetts.

Hampden County.—Wm. G. Breck, M.D., Springfield, who is authorized as above.

Hampshire County.—A. W. Thompson, M.D., Northampton, and D. W. Minor, M.D., Ware, authorized as above.

Franklin County.—Frederick A. Sawyer, M.D., of Greenfield, late Surgeon of the 52d Mass. Vols., and C. W. Duncan, M.D., Shelburne, who are authorized as above.

Worcester County.—Southwest District:—F. D. Brown, M.D., of Webster, authorized as above. Northwest District:—Warren Tyler, M.D., late Assistant Surgeon 36th Mass. Vols., Brookfield, and J. C. Batchelder, M.D., late Assistant Surgeon 25th Mass. Vols., Templeton, who are severally authorized as above. East District:—J. Henry Robinson, M.D., of Southborough, authorized as above. Worcester North:—Alfred Hitchcock, M.D., Alfred Miller, M.D., of Fitchburg, and A. D. Peck, M.D., of Sterling, severally authorized as above. Worcester Centre:—Joseph Sargent, M.D., Henry Clark, M.D., and Rufus Woodward, M.D., of Worcester, severally authorized as above. Worcester South:—Francis Leland, M.D., late Surgeon of 2d Mass. Vols., authorized as above.

Middlesex County.—First District:—A. B. Bancroft, M.D., Charlestown. Malden, Melrose, Somerville—J. L. Sullivan, M.D., authorized as above. Second District:—Belmont, Brighton, Waltham, W. Cambridge—A. C. Wheeler, M.D., late Surgeon 43d Mass. Vols., and Fred. Winsor, M.D., late Surgeon 49th Mass. Vols., Cambridge, severally authorized as above. Third District:—Ashland, Framingham, Holliston, Hopkinton, Natick, Newton, Sherborn, Sudbury, Wayland, Weston—Henry Bigelow, M.D., of Newton Corner, Louis E. Partridge, M.D., of Natick, and Otis E. Hunt, M.D., of Weston, severally authorized as above. Fourth District:—Acton, Ashby, Boxborough, Carlisle, Concord, Dunstable, Groton, Lincoln, Littleton, Marlborough, Pepperell, Shirley, Stow, Townsend, Tyngsborough, Westford—Henry A. Barrett, M.D., of Concord, J. Q. A. McCollester, M.D., late Surgeon 53d Mass. Vols., of Groton, William W. Clafin, M.D., late Assistant Surgeon 13th Mass. Vols., of Marlborough, severally authorized as above. Fifth District:—Bedford, Burlington, Lexington, Medford, Stoneham, Wilmington, Winchester, Woburn—Charles V. Bemis, M.D., Medford, authorized as above. North Reading, South Reading, Reading, F. F. Dole, M.D., authorized as above. Sixth District:—Chelmsford, Billerica (attached), Dracut, Lowell—Elisha Huntington, M.D., of Lowell, authorized as above.

Essex County.—First District:—Lynn, Nahant, Swampscott, Lynnfield, Saugus—Edward Newhall, M.D., of Lynn, and James M. Nye, M.D., of Lynn, authorized as above. Marblehead—H. H. F. Whitmore, M.D. Second District:—Danvers, South Danvers, Middleton—Geo. Osborn, M.D., of So. Danvers, authorized as above. Salem—Geo. A. Perkins, M.D. Wenham, Hamilton, Topsfield, Rowley (at

tached):—John L. Robinson, M.D., late Assistant Surgeon 8th Mass. Vols., authorized as above. Third District:—Andover, North Andover, Boxford, Lawrence, Methuen—Joseph Kittredge, M.D., North Andover, and Daniel Dana, Jr., M.D., of Lawrence, late Surgeon 14th Mass. Vols., authorized as above. Haverhill and Bradford—O. S. Lovejoy, M.D., authorized as above. Fourth District:—Amesbury, Georgetown, Groveland, Newbury, Newburyport, Salisbury, West Newbury—Yorick G. Hurd, M.D., late Surgeon of the 48th Mass. Volunteer Militia, authorized as above. Fifth District:—Beverly—Charles Haddock, M.D., late Surgeon 8th Mass. Vol. Militia. Essex, Ipswich—Joseph E. Bomer, M.D., of Ipswich. Gloucester, Manchester—H. E. Davidson, M.D. Rockport—Benj. Haskell, M.D., severally authorized as above.

Suffolk County.—James F. Harlow, M.D., Stephen Mighill, M.D., Wm. H. Page, M.D., Adino B. Hall, M.D., Boston. D. McB. Thaxter, M.D., Joseph Gould, M.D., late Asst. Surgeon 4th Mass. Militia, South Boston. M. B. Leonard, M.D., East Boston. Wm. G. Wheeler, M.D., Chelsea, who are authorized as above.

Norfolk County.—North District:—Brookline, Roxbury, Dorchester, West Roxbury—John S. Flint, M.D., Roxbury, authorized as above. East District:—Braintree, Randolph, Milton, Stoughton, Quincy, Weymouth—C. C. Holmes, M.D., of Milton, and Appleton Howe, M.D., of Weymouth, authorized as above. West District:—Bellingham, Canton, Dedham, Dover, Foxborough, Franklin, Medfield, Medway, Needham, Sharon, Walpole, Wrentham—Ebenezer Burgess, M.D., of Dedham, A. LeBaron Monroe, M.D., of Medway, and Ezra Abbot, M.D., of Canton, severally authorized as above.

Bristol County.—Attleborough—John R. Bronson, M.D. Easton, Norton, Taunton, Mansfield, Raynham—Ira Sampson, M.D., of Taunton, authorized as above. South District:—Dartmouth, New Bedford—Andrew Mackie, M.D., authorized as above. West District:—Berkley, Dighton, Fall River, Freetown, Rehoboth, Seekonk, Somerset, Swansea, Westport—Foster Hooper, M.D., of Fall River, authorized as above.

Plymouth County.—North District:—Abington, Cohasset, Hanover, Hingham, Hull, Scituate, S. Scituate—J. E. Harlow, M.D., of Hingham, authorized as above. South District:—North Bridgewater (attached), Acushnet, Bridgewater, Carver, Fairhaven, Lakeville, Mattapoisett, Wareham, Marion, Rochester, East Bridgewater (attached), West Bridgewater (attached), Middleborough—Asa Millett, M.D., of Bridgewater, Wm. E. Sparrow, M.D., of Mattapoisett, and Woodbridge R. Howes, M.D., of Mattapoisett, late Asst. Surgeon 3d Mass. Vol. Militia, authorized as above. Middle District:—Duxbury, Halifax, Hanson, Kingston, Marshfield, Pembroke, Plymouth, Plympton—Alexander Jackson, M.D., of Plymouth, and Joseph Hager, M.D., of Marshfield, authorized as above.

Barnstable, Nantucket and Dukes Counties.—Cape District:—Brewster, Chatham, Dennis, Eastham, Harwich, Orleans, Provincetown, Truro, Wellfleet, Yarmouth—Franklin Dodge, M.D., of Harwich, E. W. Carpenter, M.D., of Chatham, George Shove, M.D., of Yarmouthport, severally authorized as above. Island District:—Barnstable, Chilmark, Edgartown, Falmouth, Nantucket, Sandwich, Tisbury—Elisha P. Fearing, M.D., of Nantucket, Edwin H. Maybury,

M.D., of Edgartown, Jonathan Leonard, M.D., of Sandwich, John M. Smith, M.D., of Barnstable, authorized to appoint as above.

The following order has been issued by the Secretary of War:—
The employment of women nurses in the U. S. General Hospitals will in future be strictly governed by the following rules:—

1. Persons approved by Miss Dix, or her authorized agents, will receive from her or them "certificates of approval," which must be countersigned by Medical Directors upon their assignment to duty as nurses within their Departments.

2. Assignments of "women nurses" to duty in General Hospitals will only be made upon application by the surgeons in charge, through Medical Directors, to Miss Dix or her agents, for the number they require, not exceeding one to every thirty beds.

3. No females, except Hospital Matrons, will be employed in General Hospitals, or, after Dec. 31, 1863, borne upon the Muster and Pay Rolls, without such certificate of approval and regular assignment, unless specially appointed by the Surgeon-General.

4. Women nurses, while on duty in General Hospitals, are under the exclusive control of the senior medical officer, who will direct their several duties, and may be discharged by him when considered supernumerary, or for incompetency, insubordination, or violation of his orders. Such discharge, with the reasons therefor, being endorsed upon the certificate, will be at once returned to Miss Dix.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, NOVEMBER 21st, 1863.

DEATHS.

	Males.	Females.	Total
Deaths during the week	46	40	86
Ave. mortality of corresponding weeks for ten years, 1853—1863,	37.7	37.2	74.9
Average corrected to increased population	00	00	82.06
Death of persons above 90	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Chol. Infan.
17	3	3	4	0	0	4	2

PAMPHLETS RECEIVED.—Hints for the Control and Prevention of Infectious Diseases, in Camps, Transports, and Hospitals. (Issued by the Sanitary Commission.)—A Report on Hospital Gangrene, Erysipelas and Pyæmia, as observed in the Departments of the Ohio and the Cumberland, with cases appended. By M. Goldsmith, Surgeon U.S.V. Published by permission of the Surgeon-General U.S.A.

MARRIED.—At Dorchester, 18th inst., Conrad Wesselhuett, M.D., to Miss Lily T., daughter of William Pope, all of Dorchester.—At Newton Corner, 17th inst., Thomas B. Hitchcock, M.D., to Miss Sarah S. Hill, all of Newton.

DIED.—At South Abington, Nov. 10th, Charles Henry Haskell, M.D., aged 31.—At South Beddington, Me., Nov. 7th, Thomas Kemble Thomas, M.D., formerly of Roxbury, Ms.

DEATHS IN BOSTON for the week ending Saturday noon, Nov. 21st, 86. Males, 46—Females, 40.—Accident, 1—apoplexy, 1—inflammation of the brain, 1—bronchitis, 3—burns, 1—cancer, 2—cholera infantum, 2—consumption, 17—convulsions, 4—croup, 3—diphtheria, 8—dropsy, 3—dropsy of the brain, 1—drowned, 1—scarlet fever, 3—typhoid fever, 4—gastroenteritis, 1—disease of the heart, 2—hernia (strangulated), 1—infantile disease, 2—intemperance, 2—jaundice, 1—disease of the liver, 1—congestion of the lungs, 2—inflammation of the lungs, 4—marasmus, 1—measles, 2—paralysis, 2—peritonitis, 1—puerperal disease, 1—purpura, 1—scrofula, 2—teething, 1—unknown, 4.

Under 5 years of age, 33—between 5 and 20 years, 13—between 20 and 40 years, 17—between 40 and 60 years, 10—above 60 years, 13. Born in the United States, 56—Ireland, 23—other places, 7.